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MS Directional Survey Data Certification

MS Directional Job Number: MSMO-55323
Survey Type: MWD
Operating Company: Matador Production Co.
Well Name & Number: Nina Cortell Federal COM 201H
Location: Lea County, NM
API Number: [REDACTED]
Tie In Depth: Surface
Surveyed Depths: 199' – 16,594' MD
Projected TD Survey: 17,013' MD
Dates Performed: 09/04/2018 – 11/01/2018

HOBBS OCD
MAY 15 2019
RECEIVED

I certify that the data is true, correct and complete and within the limitations of the tool set forth by MS Directional; that I am authorized and qualified to make this report and that I have reviewed this report and find it conforms to the principles and procedures as set forth by MS Directional.

Digitally signed by: 

MWD Surveyor Name: Jason Fulton

Date: 11-14-2018

Email: jfulton@msdir.com

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Company:	Matador Production Co.		
Well Name:	Nina Cortell Federal COM 201H		
Location:	Lea County, NM		
Rig:	Patterson #282	Magnetic Declination:	6.58
Job Number:	MSMO-55323		
API #:	30-025-44554		

REFERENCED TO GRID NORTH

Vertical Section Azimuth:	359.51	Proposed Direction:	359.51
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	17,013	85.8	355.6	12216.06	5023.64	-215.03	5025.29

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
TIE IN	0	0.00	0.00	0.00	0.00	0.00			0.00		
1	199	1.50	277.30	198.98	0.33	-2.58	0.35	2.60	277.30	0.75	0.75
2	379	1.10	289.60	378.93	1.21	-6.55	1.27	6.66	280.47	0.27	-0.22
3	565	0.90	302.30	564.90	2.59	-9.46	2.67	9.81	285.30	0.16	-0.11
4	747	1.00	299.80	746.88	4.14	-12.05	4.25	12.74	288.97	0.06	0.05
5	936	1.10	306.20	935.85	6.03	-14.95	6.16	16.12	291.98	0.08	0.05
6	1,124	0.30	98.50	1123.84	7.03	-15.92	7.16	17.40	293.82	0.73	-0.43
7	1,313	1.30	167.90	1312.82	4.86	-14.98	4.98	15.74	287.97	0.65	0.53
8	1,501	3.20	211.50	1500.68	-1.70	-17.27	-1.56	17.36	264.37	1.29	1.01
9	1,690	4.70	219.00	1689.22	-12.22	-24.90	-12.01	27.74	243.86	0.84	0.79
10	1,879	4.90	222.40	1877.56	-24.20	-35.22	-23.90	42.73	235.51	0.18	0.11
11	2,068	5.30	224.50	2065.81	-36.38	-46.78	-35.98	59.26	232.12	0.23	0.21
12	2,257	3.50	260.10	2254.28	-43.60	-58.58	-43.10	73.03	233.34	1.69	-0.95
13	2,445	3.10	269.70	2441.97	-44.62	-69.32	-44.02	82.44	237.23	0.36	-0.21
14	2,634	2.90	281.70	2630.71	-43.67	-79.11	-43.00	90.37	241.10	0.35	-0.11
15	2,822	4.00	249.60	2818.38	-45.00	-89.92	-44.23	100.55	243.42	1.16	0.59
16	3,012	3.90	219.10	3007.95	-52.32	-100.20	-51.46	113.04	242.43	1.09	-0.05
17	3,201	3.10	217.40	3196.60	-61.37	-107.36	-60.45	123.66	240.25	0.43	-0.42
18	3,391	4.60	225.30	3386.17	-70.81	-115.90	-69.82	135.82	238.58	0.84	0.79
19	3,580	5.20	233.00	3574.48	-81.30	-128.13	-80.20	151.74	237.60	0.47	0.32
20	3,768	2.90	231.70	3762.00	-89.37	-138.66	-88.18	164.97	237.20	1.22	-1.22
21	3,957	2.00	235.20	3950.82	-94.22	-145.12	-92.97	173.02	237.01	0.48	-0.48
22	4,145	0.40	231.00	4138.77	-96.50	-148.33	-95.23	176.96	236.95	0.85	-0.85
23	4,335	0.40	133.30	4328.77	-97.37	-148.36	-96.10	177.46	236.72	0.32	0.00
24	4,524	1.30	74.30	4517.75	-97.25	-145.82	-96.00	175.27	236.30	0.61	0.48
25	4,714	1.50	64.90	4707.69	-95.61	-141.49	-94.39	170.76	235.95	0.16	0.11
26	4,903	1.10	53.20	4896.65	-93.47	-137.80	-92.29	166.51	235.85	0.25	-0.21
27	4,955	0.80	48.20	4948.64	-92.93	-137.13	-91.76	165.65	235.87	0.60	-0.58
28	5,091	0.90	55.40	5084.62	-91.69	-135.54	-90.53	163.64	235.92	0.11	0.07
29	5,280	0.90	56.70	5273.60	-90.03	-133.08	-88.89	160.67	235.92	0.01	0.00
30	5,469	0.70	30.50	5462.58	-88.22	-131.25	-87.10	158.15	236.09	0.22	-0.11
31	5,657	0.50	8.80	5650.57	-86.42	-130.54	-85.30	156.56	236.49	0.16	-0.11
32	5,846	0.30	38.30	5839.57	-85.22	-130.11	-84.11	155.53	236.78	0.15	-0.11
33	6,034	0.40	49.70	6027.56	-84.41	-129.30	-83.30	154.42	236.86	0.06	0.05

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Job Number:	MSMO-55323		
API #:	30-025-44554		

REFERENCED TO GRID NORTH

Vertical Section Azimuth:	359.51	Proposed Direction:	359.51
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	17,013	85.8	355.6	12216.06	5023.64	-215.03	5025.29				
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
34	6,222	0.70	65.60	6215.56	-83.51	-127.76	-82.42	152.63	236.83	0.18	0.16
35	6,411	0.60	125.90	6404.55	-83.61	-125.90	-82.54	151.14	236.41	0.35	-0.05
36	6,600	2.20	244.80	6593.50	-85.74	-128.38	-84.64	154.38	236.26	1.35	0.85
37	6,788	1.90	250.40	6781.38	-88.32	-134.59	-87.17	160.98	236.73	0.19	-0.16
38	6,977	1.70	243.20	6970.29	-90.64	-140.04	-89.44	166.81	237.09	0.16	-0.11
39	7,166	2.30	224.30	7159.17	-94.62	-145.19	-93.37	173.30	236.91	0.47	0.32
40	7,355	2.10	181.30	7348.05	-100.79	-147.92	-99.52	178.99	235.73	0.86	-0.11
41	7,543	0.70	136.50	7535.99	-105.07	-147.21	-103.81	180.86	234.48	0.89	-0.74
42	7,732	0.90	115.90	7724.97	-106.55	-145.08	-105.31	180.00	233.70	0.18	0.11
43	7,921	1.00	120.70	7913.95	-108.05	-142.32	-106.82	178.69	232.80	0.07	0.05
44	8,109	1.10	136.10	8101.91	-110.18	-139.66	-108.98	177.89	231.73	0.16	0.05
45	8,296	1.40	136.30	8288.87	-113.13	-136.84	-111.95	177.55	230.42	0.16	0.16
46	8,485	1.60	141.20	8477.81	-116.85	-133.59	-115.71	177.48	228.82	0.13	0.11
47	8,674	1.70	142.50	8666.73	-121.13	-130.23	-120.02	177.86	227.07	0.06	0.05
48	8,862	1.10	147.10	8854.67	-124.86	-127.55	-123.77	178.49	225.61	0.32	-0.32
49	9,051	1.30	322.60	9043.66	-124.68	-127.87	-123.58	178.59	225.72	1.27	0.11
50	9,240	0.90	294.00	9232.62	-122.37	-130.53	-121.25	178.92	226.85	0.35	-0.21
51	9,428	1.60	327.30	9420.58	-119.57	-133.29	-118.42	179.06	228.11	0.52	0.37
52	9,617	2.60	306.60	9609.45	-114.79	-138.16	-113.60	179.62	230.28	0.66	0.53
53	9,805	1.30	346.90	9797.35	-110.17	-142.07	-108.95	179.78	232.21	0.97	-0.69
54	9,994	1.60	353.40	9986.29	-105.46	-142.86	-104.23	177.57	233.56	0.18	0.16
55	10,183	1.40	358.30	10175.22	-100.53	-143.23	-99.30	174.99	234.94	0.13	-0.11
56	10,372	1.40	333.40	10364.17	-96.16	-144.33	-94.92	173.43	236.33	0.32	0.00
57	10,561	1.30	345.10	10553.11	-92.02	-145.92	-90.77	172.51	237.76	0.15	-0.05
58	10,749	0.80	233.20	10741.10	-90.75	-147.52	-89.48	173.19	238.40	0.94	-0.27
59	10,944	1.30	219.50	10936.06	-93.27	-150.01	-91.98	176.64	238.13	0.29	0.26
60	11,133	1.10	221.60	11125.02	-96.28	-152.58	-94.97	180.42	237.75	0.11	-0.11
61	11,322	1.30	212.30	11313.98	-99.45	-154.93	-98.12	184.10	237.30	0.15	0.11
62	11,478	1.20	203.00	11469.94	-102.45	-156.51	-101.11	187.06	236.79	0.14	-0.06
63	11,549	0.80	207.80	11540.93	-103.57	-157.04	-102.22	188.12	236.59	0.58	-0.56
64	11,643	10.10	7.50	11634.48	-95.96	-156.26	-94.62	183.37	238.45	11.55	9.89
65	11,690	17.20	4.20	11680.12	-84.93	-155.22	-83.60	176.93	241.31	15.19	15.11
66	11,738	23.70	4.30	11725.07	-68.21	-153.97	-66.89	168.40	246.11	13.54	13.54
67	11,832	30.00	5.80	11808.90	-25.95	-150.18	-24.67	152.40	260.20	6.74	6.70



SURVEY CALCULATION PROGRAM

11/13/18 16:40

Company:	Matador Production Co.		
Well Name:	Nina Cortell Federal COM 201H		
Location:	Lea County, NM		
Rig:	Patterson #282	Magnetic Declination:	6.58
Job Number:	MSMO-55323		
API #:	30-025-44554		

REFERENCED TO GRID NORTH

Vertical Section Azimuth:	359.51	Proposed Direction:	359.51
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	17,013	85.8	355.6	12216.06	5023.64	-215.03	5025.29

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
68	11,927	39.10	2.40	11887.07	27.73	-146.51	28.98	149.11	280.72	9.79	9.58
69	12,021	46.60	359.60	11955.94	91.59	-145.51	92.83	171.93	302.19	8.23	7.98
70	12,116	53.10	359.80	12017.16	164.16	-145.88	165.40	219.62	318.37	6.84	6.84
71	12,211	59.10	2.10	12070.13	242.96	-144.52	244.18	282.69	329.25	6.63	6.32
72	12,305	68.70	358.80	12111.44	327.25	-143.96	328.47	357.52	336.26	10.69	10.21
73	12,368	78.30	359.10	12129.32	387.58	-145.06	388.81	413.84	339.48	15.24	15.24
74	12,397	77.80	358.80	12135.32	415.95	-145.58	417.18	440.69	340.71	2.00	-1.72
75	12,476	82.20	359.00	12149.04	493.71	-147.07	494.95	515.15	343.41	5.58	5.57
76	12,523	84.10	358.00	12154.64	540.36	-148.29	541.61	560.34	344.65	4.56	4.04
77	12,570	86.60	357.80	12158.45	587.17	-150.01	588.43	606.03	345.67	5.34	5.32
78	12,665	87.00	357.40	12163.75	681.94	-153.98	683.23	699.11	347.28	0.59	0.42
79	12,760	87.30	357.30	12168.48	776.72	-158.37	778.04	792.70	348.48	0.33	0.32
80	12,854	90.10	357.50	12170.61	870.59	-162.63	871.95	885.65	349.42	2.99	2.98
81	12,948	90.20	357.20	12170.36	964.49	-166.98	965.88	978.83	350.18	0.34	0.11
82	13,043	90.60	357.30	12169.70	1059.37	-171.54	1060.80	1073.17	350.80	0.43	0.42
83	13,137	90.60	356.90	12168.72	1153.25	-176.29	1154.71	1166.65	351.31	0.43	0.00
84	13,231	90.90	356.60	12167.49	1247.09	-181.62	1248.60	1260.24	351.71	0.45	0.32
85	13,325	90.60	358.20	12166.26	1340.98	-185.88	1342.52	1353.80	352.11	1.73	-0.32
86	13,420	90.10	359.30	12165.68	1435.96	-187.96	1437.51	1448.20	352.54	1.27	-0.53
87	13,514	90.60	359.20	12165.10	1529.94	-189.19	1531.51	1541.60	352.95	0.54	0.53
88	13,609	90.70	0.10	12164.02	1624.94	-189.77	1626.50	1635.98	353.34	0.95	0.11
89	13,703	90.80	0.20	12162.79	1718.93	-189.52	1720.49	1729.34	353.71	0.15	0.11
90	13,812	90.90	0.30	12161.18	1827.91	-189.05	1829.46	1837.66	354.10	0.13	0.09
91	13,907	89.70	359.50	12160.68	1922.91	-189.21	1924.46	1932.20	354.38	1.52	-1.26
92	14,001	88.60	359.80	12162.07	2016.90	-189.79	2018.45	2025.81	354.62	1.21	-1.17
93	14,096	90.50	0.90	12162.82	2111.89	-189.21	2113.43	2120.35	354.88	2.31	2.00
94	14,190	89.60	1.30	12162.74	2205.87	-187.40	2207.39	2213.81	355.14	1.05	-0.96
95	14,285	89.20	1.80	12163.73	2300.83	-184.83	2302.32	2308.24	355.41	0.67	-0.42
96	14,379	88.20	1.70	12165.86	2394.76	-181.96	2396.23	2401.66	355.65	1.07	-1.06
97	14,473	91.00	1.10	12166.52	2488.72	-179.67	2490.16	2495.19	355.87	3.05	2.98
98	14,568	91.30	0.90	12164.61	2583.68	-178.01	2585.11	2589.81	356.06	0.38	0.32
99	14,662	91.10	1.60	12162.65	2677.64	-175.96	2679.05	2683.42	356.24	0.77	-0.21
100	14,757	91.20	2.40	12160.74	2772.56	-172.64	2773.94	2777.93	356.44	0.85	0.11
101	14,851	91.50	2.80	12158.52	2866.44	-168.38	2867.77	2871.38	356.64	0.53	0.32

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	17,013	85.8	355.6	12216.06	5023.64	-215.03	5025.29				
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
102	14,945	91.90	3.70	12155.74	2960.25	-163.05	2961.53	2964.73	356.85	1.05	0.43
103	15,039	89.70	2.90	12154.42	3054.07	-157.64	3055.31	3058.14	357.05	2.49	-2.34
104	15,133	88.90	3.10	12155.57	3147.94	-152.72	3149.13	3151.64	357.22	0.88	-0.85
105	15,228	88.00	2.30	12158.14	3242.80	-148.25	3243.95	3246.18	357.38	1.27	-0.95
106	15,322	88.80	359.90	12160.77	3336.73	-146.45	3337.86	3339.95	357.49	2.69	0.85
107	15,417	89.10	359.80	12162.51	3431.72	-146.70	3432.85	3434.85	357.55	0.33	0.32
108	15,511	89.10	360.00	12163.98	3525.71	-146.86	3526.83	3528.76	357.61	0.21	0.00
109	15,605	88.40	359.60	12166.03	3619.68	-147.19	3620.81	3622.67	357.67	0.86	-0.74
110	15,699	91.20	358.20	12166.36	3713.65	-148.99	3714.79	3716.64	357.70	3.33	2.98
111	15,794	90.20	357.60	12165.20	3808.58	-152.47	3809.75	3811.63	357.71	1.23	-1.05
112	15,888	90.00	357.40	12165.04	3902.49	-156.57	3903.69	3905.63	357.70	0.30	-0.21
113	15,982	90.30	356.90	12164.79	3996.37	-161.25	3997.61	3999.63	357.69	0.62	0.32
114	16,077	91.30	357.80	12163.47	4091.26	-165.64	4092.53	4094.61	357.68	1.42	1.05
115	16,171	90.90	357.90	12161.66	4185.18	-169.16	4186.47	4188.59	357.69	0.44	-0.43
116	16,266	88.80	358.20	12161.91	4280.12	-172.40	4281.43	4283.59	357.69	2.23	-2.21
117	16,360	86.60	358.40	12165.68	4373.99	-175.18	4375.33	4377.50	357.71	2.35	-2.34
118	16,455	86.50	357.90	12171.40	4468.77	-178.24	4470.13	4472.32	357.72	0.54	-0.11
119	16,549	85.70	357.20	12177.79	4562.47	-182.25	4563.86	4566.11	357.71	1.13	-0.85
120	16,644	84.90	357.20	12185.58	4657.03	-186.88	4658.46	4660.78	357.70	0.84	-0.84
121	16,738	83.60	354.50	12195.00	4750.30	-193.64	4751.79	4754.25	357.67	3.17	-1.38
122	16,832	86.20	355.80	12203.35	4843.59	-201.56	4845.13	4847.78	357.62	3.09	2.77
123	16,927	86.00	355.80	12209.81	4938.11	-208.50	4939.72	4942.51	357.58	0.21	-0.21
124	16,954	85.80	355.60	12211.74	4964.97	-210.52	4966.59	4969.43	357.57	1.05	-0.74
PTB:	17,013	85.80	355.60	12216.06	5023.64	-215.03	5025.29	5028.24	357.55	0.00	0.00